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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,831	04/10/2001	Elizabeth Shriberg	SRI/4316	1269

7590 09/27/2005

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EXAMINER
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ALBERTALLI, BRIAN LOUIS

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/829,831

Applicant(s)

SHRIBERG ET AL.

Examiner

Brian L. Albertalli

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 25, 2005 has been entered.

### ***Response to Arguments***

2. Applicant's arguments, see page 8, filed July 25, 2005, with respect to the rejection(s) of claim(s) 1, 11, and 21 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lennig (U.S. Patent 6,873,953).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 7-10, 11-13, and 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lennig (U.S. Patent 6,873,953).

In regard to claims 1, 11, and 21, Lennig discloses a method, apparatus, and electronic storage medium for storing a program that, when executed by a processor, causes a system to perform a method for processing a speech signal (column 3, lines 35-38) comprising:

extracting prosodic features from a speech signal (fundamental frequency of a frame, column 5, lines 48-61 and column 6, lines 6-7);

modeling the prosodic features to identify at least one speech endpoint (Fig. 4, steps 403 and 404, intonation pattern to determine end of utterance condition, column 5, lines 48-61, column 6, lines 7-15, and column 7, lines 11-24);

producing an endpoint signal corresponding to the occurrence of at least one endpoint (step 411, identification of end of utterance signal, column 7, lines 61-65); and

providing the endpoint signal and the speech signal to a speech processing application to facilitate subsequent processing of the speech signal (Fig. 1, the endpointed speech signal feature vectors are passed to decoder 8 for subsequence recognition processing of the speech signal, column 3, lines 15-30).

In regard to claims 2 and 12, Lennig discloses processing pitch information within the speech signal (fundamental frequency, column 5, lines 50-53).

In regard to claims 3 and 13, Lennig discloses determining a duration pattern (Fig. 4, final syllable duration T2, steps 407 and 408, column 7, lines 43-54); and performing pause analysis (steps 405 and 406, pause duration T1, column 7, lines 36-41).

In regard to claims 7 and 17, Lennig discloses the producing step comprises generating a posterior probability regarding the at least one speech endpoint (Fig. 4, step 409, overall probability, column 7, lines 55-60).

In regard to claims 8 and 18, Lennig discloses the posterior probability regarding a plurality of speaker states including a probability that a speaker has completed an utterance (overall probability, column 7, lines 55-60) or a probability that the speaker is pausing due to hesitation (probability given pause duration T1, column 7, lines 36-41).

In regard to claims 9 and 19, Lennig discloses the posterior probability is continuously updated as the speech signal is processed (Fig. 4, after end of utterance determination is made for a frame, the next frame is input, column 7, lines 61-65).

In regard to claims 10 and 20, Lennig discloses executing the speech recognition routine for processing the speech signal using the at least one speech endpoint (Fig. 1,

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the endpointed speech signal feature vectors are passed to decoder 8 for subsequence recognition processing of the speech signal, column 3, lines 15-30).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-5 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lennig, in view of Sonmez et al. (*Modeling Dynamic Prosodic Variation for Speaker Verification*).

Lennig discloses:

generating a pitch contour (intonation pattern, column 5, lines 53-56).

Lennig further discloses that any type of prosodic parameter or knowledge source can be incorporated using a histogram technique to determine the endpoint of a signal (column 4, line 64 to column 5, line 10 and column 6, lines 54-56).

Lennig does not disclose:

producing a pitch movement model from the pitch contour; and

extracting a pitch movement slope from the pitch movement model.

Sonmez et al. disclose:

producing a pitch movement model from the pitch contour; and

extracting a pitch movement slope from the pitch movement model (page 2, section 3, first paragraph and segment slope equation).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Lennig to extract pitch slope from the pitch movement model, since the stylized contours provide significant data reduction, as taught by Sonmez et al. (page 2, section 3, lines 4-5).

7. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lennig, in view of Sonmez et al., and further in view of Shriberg et al. (*Prosody-based Automatic Segmentation of Speech into Sentences and Topics*).

Neither Lennig nor Sonmez et al. discloses the at least one pitch parameter is a difference between the pitch information in the speech signal and baseline pitch information.

Shriberg et al. discloses determining a difference between pitch information in the speech signal and baseline information (the pitch range of a word relative to a baseline, page 135, 2<sup>nd</sup> column, 2<sup>nd</sup> paragraph, lines 1-5 and lines 11-16).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Lennig and Sonmez et al. to determine a difference between pitch information and baseline information since the baseline is the most useful pitch parameter out of baselines, topline, and intermediate range measures, as taught by Shriberg et al. (page 135, 1<sup>st</sup> column, 2<sup>nd</sup> paragraph, lines 8-16).

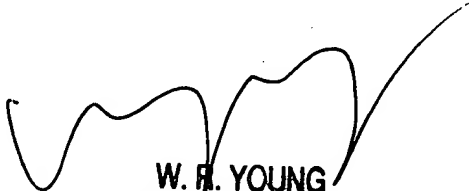
***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Albertalli whose telephone number is (571) 272-7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BLA 9/21/05

  
**W. R. YOUNG**  
**PRIMARY EXAMINER**